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Contact Transparency of Nanotube-Molecule-Nanotube Junctions S. H. KE, H. U. BARANGER, WEITAO YANG, Duke University — The transparency of contacts between conjugated molecules and metallic single-walled carbon nanotubes is investigated using a single-particle Green's function method which combines a Landauer approach with *ab initio* density functional theory. We find that the overall conjugation required for good contact transparency is broken by connecting through a six-member ring on the tube. Full conjugation achieved by an all-carbon contact through a five-member ring leads to near perfect contact transparency for different conjugated molecular bridges. [Phys. Rev. Lett. **99,** 146802 (2007)]

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